WEBSITE
www.herning.dk

SECTOR
Danish municipality

LOCATION
Herning, Denmark

CHALLENGES
- Invest in a new and cost intensive server room or introduce virtualization
- Demands for constant performance enhancement and reduction of operating costs in the public sector

SOLUTION
Introduced virtualization of Herning's servers in 2003 and has moved from 200 physical servers to 550 virtual servers on 15 physical servers with a view to simplifying operations and making the IT architecture more efficient and flexible. The city has continually moved in the direction of more automation and most recently introduced integrated network virtualization.

RESULTS
- Increased IT performance
- Lower operating and procurement costs
- Easier administration and greater flexibility
- Savings on hardware, electricity and cooling

Herning and VMware have cooperated closely for more than a decade to virtualize the city's infrastructure

Since 2003, Herning has cooperated closely with VMware on a radical move from using physical servers to being almost 100% virtualized. The development has meant easier administration, lower costs, more efficient use of resources, savings and a future-proof IT setup. Next phase in the partnership is network virtualization.

Herning is one of Denmark's largest municipalities with a population of 87,000 and 8,500 public employees. The local authorities cover a broad range of services 'from cradle to grave' including day care, schools, employment, integration, environment, traffic, culture and care of the elderly.

The challenge

Thirteen years ago, Herning's IT department was facing a strategic decision: either invest in an entirely new server room or organize the city's IT resources in a brand new and innovative way. They chose to introduce virtualization to consolidate their servers. Since then, Herning has maintained close cooperation with VMware, developing and intensifying their partnership through continual discussions and consulting.

The solution

The long-term cooperation began with the migration of 35 of Herning's then 200 servers to virtual machines ending up with only four physical servers. Since then, the city has continued along that path and now operates 550 virtual servers on 15 physical servers.

The result of the strategic shift to virtualization technology is a long list of benefits including enhanced IT security, lower operating and procurement costs, more reliable data processing and substantial savings on electricity and cooling.

"I instantly hooked on to the technology and was convinced already by then that this was the right direction for the future. At the same time, I clearly envisaged

a savings perspective for the city and recognized benefits that are not available in the physical world," explains Server Manager at Herning Municipality Mikael Korsgaard Jensen, who has been involved in the project from the early start.

Over the years, the implementation of VMware's various solutions has been characterized by steady and open dialogue, and this is a main reason why cooperation has been so smooth for more than 10 years.

"Each time, I come forward with an idea or a proposal, I am contacted by VMware, and we have an in-depth dialogue about my request. We are having fruitful discussions, which have, in fact, only improved over all these years, and I would characterize VMware as a close partner rather than just a supplier," Mikael Korsgaard Jensen says.

The results

Similar to most other government organizations, Herning has been through numerous cutbacks while the scope of service has remained unchanged or even increased. At the same time, the complexity and scope of the municipal IT operations mean that it has been necessary to minimize the administration and resource consumption of the infrastructure, which was possible thanks

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• vRealize Automation
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• vRealize Operations

to the shift to virtualization.

"Since we have an increasing number of assignments and fewer hands, it is imperative that the amount of administration is as limited as it is the case with virtualization. It is difficult to quantify the gain from less administration, greater flexibility and higher reliability, but the benefits are substantial," Mikael Korsgaard Jensen explains. He adds that Herning saves several million kroner per year on cooling and electricity thanks to virtualization.

A further result of the shift from physical to virtual servers is that the city is less vulnerable in terms of hardware. While, previously, it could take months to obtain the right equipment to install a new server, the operation now takes 10 minutes thanks to virtualization technology.

"It used to take hours and hours to service our hardware. This work has been significantly simplified despite the fact that the number of virtual servers has increased. The functionality of the virtualization software also means that the system automatically uses the servers' resources most efficiently. As a result, we do not have to monitor the machines constantly since the way they consume the resources provides optimal performance," says Mikael Korsgaard Jensen.

Prospects for the future

Herning is among the most advanced Danish municipalities in terms of virtualization and plans to continue the close cooperation with VMware over the next few years. The goal is to enhance the IT infrastructure with a view to maintaining Herning's position as one of the most visionary and dynamic municipalities in terms of IT.

"As I see it, all IT services in a municipality can be virtualized, and I believe our experiences prove that. In the years to come, we aim to develop our automation solution, enhance the reliability and security of our networks and improve our capacity for cooperating with the neighboring municipalities," Mikael Korsgaard Jensen explains.

As from 2016, Herning will be implementing NSX, which is VMware's

platform for network virtualization. With NSX, the majority of the administrators' tasks will migrate from hardware to software and, among the benefits, this will eliminate the physical work of moving switches and reconfiguring networks when a machine is relocated.

"NSX provides us with a number of new opportunities such as micro-segmentation. The first step will be micro-segmentation of our DMZ while, in the longer perspective, we aim to microsegment our administrative networks on the server side, and then we will be looking to extend our networks to a remote site," explains Mikael Korsgaard Jensen adding that an added advantage of NSX is the improved option to cooperate with other municipalities.

"I believe the future will offer more examples of municipal operating partnerships, and these will be easier to achieve if we are working with network virtualization. With NSX, the security in our networks will be enhanced enabling them to communicate safely," he adds.

In addition to NSX, Mikael Korsgaard Jensen points to another focus area for the near future:

"We plan to extend our solution with VMware's business management software system vRealize Business, which is primarily used to demonstrate the real costs of operating the various systems. By enabling us to see how much it really costs to operate each individual system, we can use it in connection with the cutbacks that we, as public authorities, are always going through to see if we can optimize our performance," he concludes.

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